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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,521	02/22/2002	V. J. Flanigan	VJF 6851.1	2948

321 7590 10/19/2005

SENNIGER POWERS
ONE METROPOLITAN SQUARE
16TH FLOOR
ST LOUIS, MO 63102

EXAMINER	
WACHTEL, ALEXIS A	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/081,521	FLANIGAN, V. J.	
	Examiner	Art Unit	
	Alexis Wachtel	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-22 and 26-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *19,20 and 26-33* is/are allowed.

6)☒ Claim(s) *21,22,34 and 35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Response to Amendment

1. Applicant's amendment and accompanying Remarks filed 7-2-8-05 have been entered and carefully considered.

The amendment is sufficient to overcome the obviousness rejections of claims 19-22,26-35 However, an updated search yielded new prior art that provides a new basis of rejection as shown below. Applicant's arguments are rendered moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 21 and 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,230,777 to Jarrell in view of US 6,054,323 to Troxler et al.

With regards to claim 21, all recitations of intended use do not limit the claimed apparatus structure. The claimed apparatus must merely be capable of functioning as claimed.

With respect to claim 21, Jarrell teaches an apparatus comprising a distillation chamber (24) for holding a pyrolyzable material, said chamber being sealable for the substantial exclusion of oxygen from said chamber; a heater (25) associated with said distillation chamber for heating said pyrolyzable material in said chamber to a

temperature sufficient to pyrolyze the rubber, distill a vapor comprising hydrocarbon from the rubber and produce a solid carbonaceous char; a gas outlet (29) for removing said vapor comprising hydrocarbon from said chamber;

A condenser (29) for producing a liquid fraction comprising hydrocarbon from said vapor removed from said chamber.

With respect to claim 21 and 22, Jarrell fails to teach the use of means for monitoring weight loss of said rubber charge in said chamber as a result of pyrolysis. Troxler et al teaches the use of a load cell (128) integrated with an oven for the purpose of weighing a sample continuously during a pyrolysis procedure (Col 4, lines 15-20). In view of this teaching it would have been obvious to one of ordinary skill at the time of the invention to have used a load cell with the distillation chamber (24) of Jarrell for the purpose of affording an operator real time monitoring of the weight loss of a pyrolyzed material.

5. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,230,777 to Jarrell in view of US 6,054,323 to Troxler et al and US 4,881,947 to Parket et al.

With respect to Claim 34, Jarrell and Troxler et al as set forth above do not teachthat the heater associated with said distillation chamber comprises radiant heating tubes in which a mixture of a hydrocarbon and an oxygen-containing gas is combusted.

Parker et al is directed to a gasification system and teaches radiant tubes heated by gaseous combustion products of burners, the heat produced being transferred to the feed material (Col 3, lines 63-66). In view of this teaching it would

have been obvious to have been obvious to one of ordinary skill to have modified the distillation chamber disclosed by Jarrell to utilize radiant tubes heated by burners since such a heating scheme would have been equivalently suited for the purpose of providing heat.

With respect to Claim 35, the instant claim recitation does not structurally limit the claimed apparatus and is given no patentable weight.

Allowable Subject Matter

6. The following is a statement of reasons for the indication of allowable subject matter: With respect to claim 19, the closest prior art to Losel discloses the claimed apparatus except for the use of a condenser as claimed. Losel is primarily concerned with means of heating a carbonization drum for a low temp carbonization process. As best disclosed in Fig.1, Losel shows that gases from a pyrlysis unit (1) enter a combustion chamber (6). Hot flue gases from the combustion chamber (6) contact a heat exchanger loop that includes a heat exchanger (10). The heat exchanger keeps the pyrolysis unit at a set temperature. Additionally, downstream from the combustion chamber (6), a flue gas cooler (8) is located which is not identified as a condenser. The combustion chamber (6) for all intents and purposes destroys toxic molecular wastes by high temperature decomposition. Therefore, there is no useful gasified pyrolysis product that would benefit from being condensed into a liquid. Claims 26-29 depend on claim 19.

With respect to claim 20, the closest prior art to Jarrell discloses the claimed apparatus except for a circulation loop for circulating a heat transfer gas from a first

reactor (corresponding the claimed first distillation chamber), through a second reactor (corresponding to a claimed second distillation chamber) and back into said first reactor (corresponding to a claimed first distillation chamber) such that the heat transfer gas contacts solid carbonaceous char in said second reactor (corresponding to a claimed second distillation chamber), heat being transferred from the carbonaceous char to the heat transfer gas in said first reactor (corresponding to a claimed first distillation chamber) to cool the char, and heat being transferred from the heat to said rubber charge in said second reactor (corresponding to a claimed second distillation chamber) to preheat the rubber charge. At best, Jarrell discloses the use of a pressure equalization line (21). During the heating of a first reactor (reads on distillation chamber) this pressure equalization line (21) is shutoff by valve (21a). When heating has stopped in a first reactor, the pressure of a second reactor is drawn to approximately 457mm Hg, resulting in an internal pressure of 303 Hg absolute. Valve (21a) in the pressure equalization line is then opened so that the heat passes from the first reactor to the second reactor and the temperature of the first reactor cools, while the temperature of the second reactor warms up (Col 8, lines 8-22). In view of this disclosure, it would not have been obvious to have provided the apparatus of Jarrell with a circulation loop as claimed since Jarrell employs a pressure equalization means whose operation would be negatively impacted without extensive and non-obvious reactor redesign if a circulation loop as claimed is integrated with the reactors. Claims 30-33 depend on claim 20.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Glenn Caldarola
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